West Monkton Church of England School

Where everyone has the courage and confidence to fly.

EYFS Maths Policy

December 2022

Review: December 2024

The Oak Partnership

Contents

Rationale

At West Monkton, we are dedicated to ensuring that all children in Early Years have the firm foundations needed in order to succeed, with mathematics being a challenging and enjoyable experience for all. Essential to this is the need for a mastery approach to be used in Early Years through the use of Mastering Number sessions and the addition of White Rose, which will pride practitioners with high quality resources, progressive steps and guidance. Combining the use of NCETM and White Rose is key in helping to facilitate the Early Years objectives in order for children to meet their end of year goals.

Intent

At West Monkton C.E Primary school we aim:

- To provide children with a mastery-based maths curriculum
- To provide high quality resources
- To support the needs of all children
- To help children to develop independence and self-confidence when using skills to complete activities
- To build on learning skills across the curriculum that support real life application
- To foster a positive attitude towards mathematics
- To encourage children to be inquisitive and explorative through a maths curriculum that is play based

Implementation

In the Early Years Foundation Stage children learn by playing and exploring, being active and through creative and critical thinking. Teachers and practitioners will provide opportunities for children to talk about and develop their mathematical understanding through these channels. To best achieve this staff will support mathematical development through child-initiated learning, continuous provision and structured teaching.

We will achieve our aims by:

- Encouraging mathematical understanding through stories, songs, games and play
- Using Numicon resources to help children reason in a mathematical way through the use of concrete objects and developing spoken language
- Ensuring that all use the concrete-pictorial-abstract approach
- Ensure that teachers and practitioners build on children's prior knowledge
- Utilise formative assessment by the use of Assessment Cycle Books (ACB) within structured teaching and objective-led planning during continuous provision
- Ensuring that all practitioners embed effective questioning into their daily practice using the OLP sheets as a mechanism for this (see appendix 2)
- Continue 'talk for teaching' to share best practice and support personal professional development
- All practitioners effectively modelling during whole class inputs, structured teaching and continuous provision to provide consistency
- Developing the use of mathematical vocabulary through explicit vocab teaching and teacher modelling
- Using wider resources and educational videos such as 'Number blocks' which is part of Mastering number sessions

What this means for our children:

- Children will have time to think deeply about concepts and will be able to show their developing understanding within a range of activities and contexts without direct supervision
- The combined approach of adult-led activities and continuous provision will develop children's self-confidence and independence
- Children will have greater resilience and perseverance to complete mathematical challenges either on their own or in co-operation with others

- A higher number of children will gain mathematical skills which will enable them to achieve the end of year Early Learning goals
- They will be more equipped to continue a mastery approach in mathematics throughout the rest of their school journey using 'Inspire Maths'
- Children will leave Reception having a positive attitude towards mathematics
- Children will have the knowledge to use the skills learnt when in real life situations
- Numicon resources allow all children, including those with SEN, to access mathematics in a way that is appropriate to their own needs. This is supported by a variety of concrete objects which provides them with the opportunity to visualise numbers
- Children will be supported by Teachers and practitioners who are also passionate about a mastery approach as it allows them to interact within a shared learning process

The Mastery Approach

What the mastery approach looks like in the Nursery

Children in Little Herons Nursery will be taught maths through delivery of the mathematics area of learning in the Early Years Foundation Stage framework. The teaching of maths in the EYFS involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces, and measures. Children will develop their understanding through play and planning within the moment to scaffold their ideas and knowledge, through a mix of adult-led and child-initiated activity.

To support our teaching and learning we use Numicon. This approach to mathematics teaches pupils to understand and make connections with numbers through a multi-sensory approach to learning by offering physical resources that can been seen and felt. Beginning with **concrete** (feeling the shapes and holes of each numerical value), then moving to **pictoria**l (solving problems where pictures are involved), and finally working in the **abstrac**t (where numbers represent symbolic values). Through this process, children learn numerous strategies to work with numbers and build understanding.

What the mastery approach looks like for Reception

Teachers will deliver daily maths lessons as whole class learning. This will allow children to be introduced to new learning objectives and mathematical concepts. Children will have the opportunity to showcase their learning and understanding through discussions, using practical resources and modelling to the rest of their peers. During the lesson adults will support children through questioning and further modelling. They will also use an 'Assessment Cycle Book' to make notes on the learning that is taking place. This will inform teachers of any gaps in the children's learning and show where further support and interventions will need to take place. As well as showing gaps in children's learning, adults will assess who has been able to show they have understood new learning and how they need to be challenged further.

In our Early Years provision at West Monkton we are strong advocates of high-quality continuous provision. This is where we will utilise high quality resources to provide opportunities for the children. This will allow them to have to practice and apply the knowledge and skills learnt from the whole class sessions, and they will be able to show whether they have 'mastered' a certain area through independent application. Practitioners will evidence this on Tapestry by taking high quality observations to show what the children have achieved and how they have helped to take the learning further. Numicon

As well as whole class teaching and continuous provision, teachers and teaching assistants will be able to work with small groups throughout the week to allow children to embed skills further and have any support needed to understand concepts taught.

In the summer term, teachers will begin to use book one of the INSPIRE teacher guide to support the children before they move up to Key Stage One. This will help to bridge the gap in readiness for when the

children move classes. It will allow them to become familiar to the language used and the tasks they may be asked to complete. Teachers will use activities from the books to enhance daily provision and allow children to complete them independently or guided with an adult. This will mean that the children are ready to move into year one already have prior knowledge about Inspire.

Roles and Responsibilities

Maths Lead/Early Years Lead will:

- Implement this policy consistently within the Early Years unit, ensuring that all staff members are aware of and understand the key principles behind the policy
- The Early Years Lead will support practitioners in the implementation of Firm Foundations planning and ensure they are equipped to deliver activities appropriately
- The Early Years Lead will additionally ensure that practitioners are competent and confident using objective-led planning and recording assessments on Tapestry
- Report to Governors, when required, on the effectiveness of the policy

The Early Years Foundation Stage unit will:

- Ensure they have regular updates/training when required to keep their knowledge up to date
- Support their class teacher in implementing the mastery approach
- Ensure they are confident when using tapestry and OLP sheets when assessing children
- Display a positive and encouraging attitude towards mathematics when supporting children in continuous provision
- Encourage children to deepen their understanding by discussing learning and asking their own questions

The Governing Body will:

- Support the school in the implementation of the policy
- Review the effectiveness of the policy as required

Parents, Carers and Families will be encouraged to:

- Promote positive learning behaviours at home and support children with their growing curiosity and enjoyment of mathematics
- Raise any concerns regarding their child's mathematical progress at parent consultations
- Support Maths based family learning events at the school
- Share their children's learning journal with them on tapestry and contribute with their own observations from maths learning that has happened at home

Appendix 1 – Mastering Number Teacher Guide

A typical lesson plan for the week for Teachers. This will allow teachers to see an overview of the week as well as the lessons broken down. Teachers can also use the plan to plan and enhance learning activities during the week.

Year: Reception; Term: 1	Week: 1	Focus: Subitising

Subject knowledge

This week, the children will be encouraged to quantify sets of objects by subitising, rather than counting. When subitising, children can say how many there are in a small group of objects by 'just seeing' and knowing straightaway without needing to count.

Subitising can be categorised as 'perceptual' or 'conceptual'. Perceptual subitising is used for very small sets of objects (initially up to about 3) and conceptual subitising is used when sub-groups can be perceived within a larger set and the whole is recognised, e.g. if 6 dots are arranged in a dice pattern, children may recognise this as 'two 3s' and know this is 6. Some arrangements are easier to subitise than others, e.g. a set of 3 dots arranged in a triangular pattern may be easier to recognise than a random arrangement, and children need to be exposed to many different arrangements.

The focus for this week is perceptual subitising. It is important that adults working with children are aware that the aim is to support children in moving away from counting for sets that can be subitised, so avoid counting 'to check' unless necessary. If a child names an incorrect quantity, an adult might make a suggestion such as, *I think when your friend looked, they saw 3; let's have another look*, before counting if the child is still unsure.

The activities this week provide opportunities for children to:

- represent the number in a given set using different objects – e.g. showing the same number on their fingers
- name quantities with number words, *(e.g. "I can see 3.")*
- match sets to numerals
- make their own arrangements that can be subitised.

Some activities are aimed at supporting children in identifying small groups of 2 or 3 within a larger set, without needing to quantify the whole set. This will support them in identifying 2s and 3s in different arrangements and will help them when they begin to move towards conceptual subitising.

Connections

Children may have experienced subitising activities incidentally, e.g. an adult may have said to them *Pick up those 2 pencils, please*, which will have enabled them to see 2 as a quantity without having counted the objects.

Subitising is an essential feature of developing number sense. It can support children's understanding of cardinality when counting (where the last number in a count identifies the number in the set) as they link a known quantity such as 3 with the counting sequence '1, 2, 3'. Subitising will also help children to identify groups and units in a repeating pattern.

Teachers can use the plan to enhance provision for children to access throughout the day and there is also the opportunity to carry out small group work that follows on from the main input. This can be with the teacher or a teaching assistant.

Further optional experiences

For children who need extra experiences, this concept can be further explored in the following ways:

Small group work	Continuous provision	Routines
• Quickly reveal small quantities of objects under a series of pots. The children must 'splat' the matching dot pattern or number plate with their hand or a fly swatter as fast as they can. • Drop a large collection of small objects (e.g. marbles) into a contained space (e.g. a tray). Encourage the children to select a subitising card for 1, 2 or 3 and find where the objects have fallen in 1s, 2s or 3s. • Use red paint to make thumbprints in patterns of 3. How many different arrangements of 3 can be printed? How about printing one that's not an arrangement of 3?	• Use paper plates or large hoops outside to make bigger arrangements of 1, 2 or 3. • Leave out the square cards from Session 2 and some simple items of a similar size (e.g. pebbles, shells, etc.). Display a pattern of 3 using 3 dots and encourage the children to use the objects to match the pattern or to create their own different patterns of 3 on the cards. • Match pairs of subitising images that show the same number, or roll a 1–3 die and find the matching image.	• When tidying up, use number words to indicate given objects, e.g. *Please can you pick up those 2 cars and put them away?* • When lining up for lunch, playtime, etc. change the number of children that you ask for, e.g. *Please line up in 2s.* • When in their environment, encourage the children to use number words and to notice quantities of real-life objects, e.g. 3 bikes in the shed, 2 footballs to put away, 3 apples in the bowl.

Each lesson will show the objective for teachers and will guide them through the lesson with a revisit at the beginning to allow adults to assess whether the children have understood prior learning. The teach and practise section will allow children to explore new learning through whole class sharing, partner work or from watching a Number Blocks video.

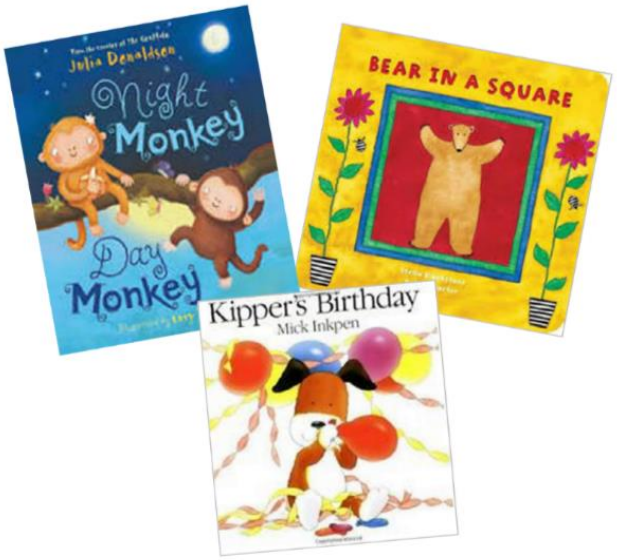
Session 1	Children will: • subitise 1 and 2.
Revisit	Display the images of Numberblocks One and Two on slide 3. *What are these Numberblocks called?* *Can you remind me of their names?*
Teach and practise	Display slide 4. *Numberblocks One and Two have set you a challenge! They will show you some dots and your job is to say what you see – but they won't show you the dots for long!* *Think first and then try to remember what you saw.* *Can you say how many dots they showed without counting?* *Can you show on your fingers the same number as the number of dots?* *Can you say what you noticed about how the dots are arranged?* Use dot cards or slides 5–19 to complete the 'quick show' activity. Encourage the children to show the same quantity on their fingers, say the amount, and then describe using simple spatial and numerical language how the 2-dot images are arranged, e.g. standing up; in a line; far apart/spread out/near to; 1 at the top, 1 at the bottom. Reveal the dots again to help the children describe the arrangements. [Note that this activity can also be done using subitising cards or magnetic counters arranged in similar patterns to those shown on the slides.]
Resources	Dot images [use slides 5–19, dot cards or magnetic counters arranged on a white board in similar patterns to those shown in the presentation]

Appendix 2 – White Rose Lesson Sequence

Phase 3 – Book List

Pete the Cat and his 4 Groovy Buttons–Eric Litwin
Witches Four – Marc Brown
Kipper's Birthday – Mick Inkpen
5 Little Fiends – Sarah Dyer
The Very Hungry Caterpillar- Eric Carle
Stella to Earth! – Simon Puttock
Square - Mac Barnett and Jon Klassen
Bear in a Square – Della Blackstone
Fox in the Dark – Alison Green
Peace at last- Jill Murphy
Kipper's Monster – Mick Inkpen
Day Monkey, Night Monkey – Julia Donaldson
The Dark, Dark Tale – Ruth Brown
Funnybones – Janet & Allen Allberg

Reading to children is an essential part of their development. Any of these books would be useful during Phase 3 alongside traditional tales such as The Enormous Turnip and The Gingerbread Man.



Reception – Autumn Phase 3 – Numbers to 5

Four

Guidance

Children count on and back to 4. They count or subitise sets of up to 4 objects to find how many and make their own collections of objects. They match the number names to numerals and quantities and are able to say which sets have more and which have fewer items. When counting, they continue to learn that the final number they say names the quantity of the set. They use their own mark-making to represent numbers to 4.

Other Resources

Pete the Cat and his 4 Groovy Buttons – Eric Litwin

Witches Four – Marc Brown

Washing Line – Jez Alborough

Anno's Counting Book – Mitsumasa Anno

Prompts for Learning

Note: All the prompts for counting to three can be applied to counting to four, plus these extra ideas.

Have a basket of something interesting to count. Ask the children to count out 4 items and arrange them on a whiteboard.

How many are there altogether?
Does your 4 look the same as mine?
Rearrange the items. How many are there now?
Can you make yours look the same as mine?
Can you arrange your 4 in a different pattern to mine?
What smaller groups can you see in your 4?

Arrange 4 items on a 5 frame – what do you notice?
Prompt the children to notice that 4 is one less than 5 so there will always be one empty space.

Circle game. Everybody stand up. Count round the circle 1, 2, 3, 4 1, 2, 3, 4 1, 2, 3, 4, etc. The person who says 4 sits down each time. Continue to count round the circle until there is only one person remaining. You can also count back 4, 3, 2, 1 and sit down on 1.

Four

Washing Line

Hanging clothes - linking to the book suggested, provide children with items to hang on the washing line. Can they count as they hang the items? How many items do they have altogether? Can we count them back into the basket?

Small World

In the small world area, create two areas (barns, fields) with signs that say 'two legs' and 'four legs'. Can children sort the animals into the correct areas by counting their legs?

Enhancements to areas of learning

Outdoor

In the parking bays, place signs for 2 wheels, 3 wheels and 4 wheels. When children park their bikes or toy cars, can they match the vehicle to the correct bay?

Outdoor

Set up a number hunt.
Hide numerals or objects with numerals on them around the outside area. Ask the children to find the numerals and to sort them into 1, 2, 3, and 4.
Encourage them to count out quantities to match each numeral.

Maths Curriculum Overview – West Monkton Primary School

(Based on White Rose and NCETM)

Children in Reception will be learning to:	Count Objects. Subitise. Link the number symbol (numeral) with its cardinal number value. Count beyond 10. Compare numbers. Understand the 'one more than/one less than' relationship between consecutive numbers. Explore the composition of numbers to 10. Automatically recall number bonds for numbers 0-10. Select, rotate and manipulate shapes in order to develop spatial reasoning skills. Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. Continue, copy, create repeating patterns. Compare length, weight and capacity.
Early Learning Goal: Number	Have a deep understanding of numbers to 10, including the composition of each number. Subitise (recognise quantities without counting) up to 5. Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.
Early Learning Goal: Numerical Patterns	Verbally count beyond 20, recognising the pattern of the counting system. Compare quantities of up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as other quantities. Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Autumn			
Main Concept	**Links with other mathematical areas**	**Coverage**	**Resources**

Baseline assessments Transition week			
Introduce 0 & 1	Circle 1 on the clock 1p Dice Numicon Ten town Cubes	• Recognise 1 • Identify the quantity 1 (the oneness of 1) • Recognise a 1p coin • Find 1 on the clock • Introduce a circle – with 1 side • Introduce a 5s frame • Number formation	S1 Episodes 1 (One) WR PowerPoint
Introduce 2	2 on the clock 2 step repeating patterns 2p Dice Numicon Ten town Cubes	• Recognise 2 • Identify the quantity 2 (the twoness of 2) • Know that 2 is 1 more than 1 • Know that 1 + 1 is 2 • Know that 2-1 is 1 • Recognise a 2p coin – understand it is equivalent to 2 x 1ps • Find 2 on the clock • Be able to continue 2 step repeating patterns • Using 5s frame • Number formation	S1 Episodes 2 (Another One) S1 Episodes 3 (Two) WR PowerPoint
Introduce 3	Triangles 3 on the clock 3 step repeating patterns 3p Dice Numicon Ten town Cubes	• Recognise 3 • Identify the quantity 3 (the threeness of 3) • Know that 3 is 1 more than 2 • Know that 3 is 2 more than 1 • Know that 1 + 2 (or 2+1) is 3 • Know that 3-1 is 2 and 3-2 is 1 • Find 3 on the clock • Understand number conservation – However you arrange the three objects, there are still 3 (use triangular arrangements and dice). • Introduce different triangles with 3 sides. • Be able to continue 3 step repeating patterns • Using 5s frame • Number formation	S1 Episodes 4 (Three) WR PowerPoint
Consolidate to 3 Triangles 3 on the clock Dice	Numicon Ten town Cubes	• Count to 3 – forwards and backwards using the 1 to 1, the stable order, the cardinal, the abstraction and the order-irrelevance principles. (see WRM) • Compare numbers 1,2 and 3 – 'bigger' and 'smaller' • Order numbers 1 to 3 • Know 3 is made of 2 and 1 or 1+1+1 • Know that 2 is 1 less than 3, 1 is 1 less than 2 • Count out 3 objects from a larger set.	S1 Episodes 5 (One, Two, Three!)

		• Use a 5 frame and recognise how many spaces there are when it contains 3 objects. • Recognise which arrangements of objects contain a group of 3. • There isn't a 3p coin – how can we pay 3p?	
		Stem Sentences: 'There are..... Objects' 'One more than ... is ....' '.... Is one more than....' 'One less than ..... is ....' ' ..... is one less than.....'	
Autumn			
NUMBER ELEMENT	**Maths in the Wider World**	**Intent**	**Resources**
Introduce 4	Quadrilaterals 4 on the clock Dice Numicon Ten town Cubes	• Recognise 4 • Count out 4 objects from a larger group and recognize the structure of 4 as a square number and within a five frame Use different arrangements of 4 to explore number conservation. • Recognise 4 items without counting (subitise) • Count to 4 (forwards and backwards) • Sequence numbers to 4 • Know that 4 is one more than 3 • Partition 4 into 3s, 2s and 1s and use the terms add and takeaway to describe the combinations. • Find 4 on the clock • Introduce a range of quadrilaterals and name the most common • Number formation	S1 Episode 6 (Four) S1 Episode 8 (Three Little Pigs) WR PowerPoint Book: Peace at last by Jill Murphy
Introduce 5	Pentagons 5 on the clock 5p Dice Numicon Ten town Cubes	• Recognise 5 • Count out 5 objects from a larger group and look at ways of arranging (including using a dice arrangement and a 5 frame). • Subitise to 5 (include instant recognition of number of fingers held up (to 5). Be able to hold up correct number of fingers without counting. • Count forwards and backwards to 5 (encourage children to line up to count) • Introduce a pentagon • Find 5 on the clock • Number formation	S1 Episodes 7 (Five) S1 Episodes 9 (Off We Go!) S1 Episodes 11 (Stampolines) WR PowerPoint

			Book: Kippers Birthday
Consolidate to 5	Shapes Money Dice Numicon Cubes Cuisenaire Rods	• Know that 5 is one more than 4 • Partition 5 in various ways using the vocabulary add and takeaway • Recognise 5p and investigate its equivalence to 2ps and 1ps • Use informal jottings to record numbers / quantities. • Sequence numbers to 5. Identify missing numbers to 5. • Introduce bar modelling with Cuisenaire Rods. • Introduce part whole model	S1 Episode 10 (How to Count) WR PowerPoint
Comparing quantities of identical then non identical objects	Different objects: bears, cubes, toys. Groups of children Objects around school	• Recognise that the number of a group can be changed by adding to it or taking from it. • Compare quantities and use the terms more, less, fewer • Introduce sharing different quantities to make it fair. How do we make this fair.	S1 Episode 14 (Holes) WR PowerPoint
1 more / 1 less Introduce taking away	Cubes Numicon Bears	• Say 1 more or 1 less to 5 without counting. • Relate taking 1 away to counting backwards	S1 Episode 15 (Hide & Seek) WR PowerPoint
Composition of numbers to 5 Number bonds to 5	Different objects: bears, cubes, toys.	• Explore partitioning a whole number into parts • Recognise that even when partitioned, the total remains the same. • Number bonds to 5	S1 Episode 12 (The Whole of Me) S1 Episode 13 (The Terrible Twos) WR PowerPoint
Numerical pattern	Sorting into groups	• Sort objects based on colour / size / shape • Investigate sorting the same objects in different ways • Play Guess my Rule with objects you have sorted • Explore 2D & 3D shapes.	
Stem Sentences: 'There are..... Objects' 'One more than ... is ....' '.... Is one more than....'			

‘One less than ….. is ….’ ‘ ….. is one less than…..’

‘ 5 is the same as … and …’

‘4 add 1 equals 5’

‘5 take away 1 equals 4’

Etc.

End of Term Assessment

Spring			
NUMBER ELEMENT	**Maths in the Wider World**	**Intent**	**Recourses**
Recap number 0 Number bonds to 5	• 2D shapes • Money • Cubes • 5 frame • Dominos	• Recap Zero. Zero is 1 less than 1 and an absence of something • A review of numbers 1 to 5 (including totaling values and coins) • Comparison of numbers to 5 using the language of greater than and less than • Consolidate recognition of 2D shapes with up to 5 sides (Circle, Semicircle, Triangle, Square, Rectangle, Pentagon)	S3 Episode 5 (Zero) S3 Episode 1 (Once upon a Time) S3 Episode 2 (Blockzilla) Book: Pattern Fish by Trudy Harris
Number bonds to 5 Patterns in numbers to 5	• Patterns • Time up to 5 o’clock • 5 frame • Bears, cubes & beads.	• Composition of 5 • Partitioning and combining 5 in different ways • Composition of numbers to 5 • Exploring the part, part-whole model to partition and combine numbers to 5 • Pattern	S3 Episode 3 (The Numberblocks Express) S3 Episode 4 (Fruit Salad)

			S4 Episode 2 (Pattern Palace)
Introduce 6 Counting to 6 The Six-ness of 6	• Weight (use balances and Numicon for number bond equivalence) • Introduce 6 o'clock • Shapes • Numicon • Cubes	• Meet Six • Counting (1 to 6) • Subitising (dice patterns) • Introduce hexagons • Number formation • Introduce 10s frame • Exploring equivalent ways to represent 6 • Partitioning 6 into equal groups • Factors of 6	S2 Episode 1 (Six) S2 Episode 8 (Counting Sheep) S3 Episode 18 (The Legend of Big Tum) WR PowerPoint Books: Six dinner Sid Kippers toy box
Introduce number 7 Counting to 7 The Seven-ness of 7	• Space & Pattern • Introduce 7 o'clock • Shapes • Numicon • Cubes	• Meet Seven • 7 is one more than 6 • Counting (1 to 7) • Introduce heptagons • Number formation • Counting 1 to 8 • Number bonds within 7	S2 Episode 2 (Seven) S2 Episode 12 (Fluffies) WR PowerPoint
Introduce number 8	• Introduce 8 o'clock	• Meet Eight • Counting (1 to 8) • 8 is one more than 7	

Counting to 8 The Eight-ness of 8 Doubling & halving Partitioning into equal groups	• Shapes • Numicon • Cubes • Dice • Dominos	• Subitising (8) • Introduce octagons • Number formation • Pairs of numbers that total 8 • Doubling (1, 2, 4, 8) and halving • Partitioning 8 into equal groups	S2 Episode 3 (Eight) S2 Episode 9 (Double Trouble) S3 Episode 14 (Octoblock to the Rescue) WR PowerPoint
Introduce number 9 Counting to 9 The Nine-ness of 9	• Introduce 9 o'clock • Nonagon • Cubes • Numicon •	• Meet Nine • Counting (1 to 9) • Partitioning and combining 9 • Subitising (9) • Comparing lengths using cubes 1-9 or Cuisenaire rods • Number formation • Partitioning 9 into 3 equal groups • Partitioning is the inverse of combining • 2D shapes and their properties up to octagon • Introduce nonagons	S2 Episode 4 (Nine) S2 Episode 10 (The Three Threes) S4 Episode 5 (The Wrong Number?) S4 Episode 1 (Flatland) WR PowerPoint
Stem Sentences: 'There are…… Objects' 'One more than … is ….' '…. Is one more than….' 'One less than ….. is ….' ' ….. is one less than…..' ' 8 is the same as … and …' ' double 1 is 2'			

‘ half of 4 is 2’			
Spring			
NUMBER ELEMENT	**Maths in the Wider World**	**Intent**	**Resources**
Introduce number 10 Counting to 10 The Ten-ness of 10	• Numicon • Introduce 10 o’clock • Cubes • Tens frame • Money	• Meet Ten • Counting (1 to 10) • 10 ones are equivalent to one 10. • Counting 1 to 10 • Introduce 10 o’clock • Introduce decagons • Introduce 10p coin and ways of making 10p with other coins • Number formation • Counting to 10	S2 Episodes 5 (Ten) S2 Episodes 6 (Just Add 1) S3 Episode 7 (Numberblobs) WR PowerPoint Book: Ten black dots by Donald Crews
Consolidate numbers 6-10 Find one more & one less	• Cubes • Numberline • Bears • Numicon	• A review of numbers 6 to 10 • Adding 1 • Subtracting 1 • Counting (1 to 10) • Counting down 10 to 1 • Count back from 10 to 1 Revisit number sentences using + & -	S3 Episode 6 (Now we are 6 to 10) S2 Episodes 15 (Ten Green Bottles) S2 Episodes 7 (Blast Off)
Introduce number bonds to 10 Combining two groups to find the whole	Numicon Tens frame Part whole model	• Introduce number bonds to 10 • Using: part whole model; bar modeling; tens frame • Comparing numbers within 10	S2 Episode 14 (Numberblock Castle) S3 Episode 15 (Ten Again)

Number bonds to 10 • Ten frame Number • part whole model		• Building with blocks and exploring space and pattern	S3 Episode 8 (Building Blocks) S4 Episode 4 (Mirror, Mirror)
Finding 2 less than a number within 10 Counting in 2s	Cubes Bears Money	• Subtracting 2 from numbers up to 10 • Counting in 2s • Subtraction • Odd and even numbers • Equal groups	S2 Episodes 13 (The Two Tree) S3 Episode 12 (Numberblock Rally) S2 Episodes 11 (Odd & Evens)
Comparing groups up to 10	Time – related to things we do in the day	• Comparison of numbers to 10 using the language of 'bigger than' 'smaller than' leading to 'greater than' and 'less than' q G • Comparison of numbers to 10 (greater than, less than and equals sign) • Partitioning and combining numbers in different ways	S3 Episode 9 (Peekaboo!) S3 Episode 10 (Hiccups) S3 Episode 11 (What's the Difference) S3 Episode 13 (Five and Friends)
Stem Sentences: 'There are..... Objects' '1 plus 9 equals 10' '2 less than .... Is ...' 'even numbers always have a friend' 'Odd numbers always have one left out'			
End of Term Assessment			

Summer			
Number Element	**Maths in the Wider world**	**Intent**	**Resources**
Counting to 11 The eleven-ness of 11 Add to a number by counting on and take away from a number by counting back	• Introduce 11 o'clock • Numicon • Tens frame • Cubes • Dienes	• Introduce the concept of 1 ten – make practically in different ways • Introduce 11 as 1 ten and 1 one – make practically and relate each digit to its place value. • Count forwards and backwards from different numbers • Use 2 dice and add on from the first dice • Number formation • Introduce using a number line for addition and subtraction	S4 Episode 6 (Eleven)
Counting to 12 The twelve-ness of 12 Doubling and halving Sharing	• Introduce 12 o'clock • Rectangles • Numicon • Tens frame • Cubes • Dienes	• Introduce 12 as 1 ten and 2 ones. • Look at how each digit corresponds to its place value. • Introduce arrays as columns and rows Look at 12 as being 3 lots of 4 or 4 lots of 3 or 6 lots of 2 or 2 lots of 6 • Can children find any other rectangular numbers? • Is 4 a rectangular number – no – but it is a quadrilateral • Look at other ways in which 12 can be segmented and use the vocabulary of 'add' and 'plus' to show how they total 12 when combined. • Look at what we double to get 12. Halve 12. Can we halve 11? • Can you share 12 things between 2,3,4 or 5 people? How many do they each get? • Number formation	S4 Episode 7 (Twelve) S4 Episode 10 (Blockstar) S4 Episode 8 (The Way of the Rectangle) S4 Episode 9 (Ride the Rays)
Counting to 13 The thirteen-ness of 13 Counting to 14	• Numicon • Tens frame • Cubes • Dienes	• Introduce 13 as 1 ten and 3 ones. • Explain that is has an irregular name (thirteen not threeteen) • Introduce 14 as 1 ten and 4 ones. • Explain that it has a regular name	S4 Episode 11 (Thirteen) S4 Episode 12 (Fourteen)

The fourteen-ness of 14 Doubling and halving Sharing		• Look at what we double to get 14. Halve 14. Can we halve 13? • Can you share 13 or 14 things between 2,3,4 or 5 people? How many do they each get? • Number formation	(could introduce Ten's Place in prep for next week)
Counting to 15 The fifteen-ness of 15 Counting to 16 The sixteen-ness of 16 Doubling and halving Sharing	• Numicon • Tens frame • Cubes • Dienes	• Introduce 15 as 1 ten and 5 ones. • Explain that is has an irregular name (fifteen not fiveteen) • Recap the equals sign (balancing bridge) • Introduce 16 as 1 ten and 6 ones. • Explain that it has a regular name • Introduce 16 as a square number. Recap other square numbers (9, 4) • Look at what we double to get 16. Halve 16. Can we halve 15? • Can you share 15 or 16 things between 2,3,4 or 5 people? How many do they each get?	S4 Episode 13 (Fifteen) S4 Episode 14 (Tween Scenes) S4 Episode 15 (Step Squads) S5 Episode 1 (Fifteen Minutes of Fame) S5 Episode 2 (On your Head) S5 Episode 3 (Ten's Place) S5 Episode 4 (Balancing Bridge) S5 Episode 5 (Sixteen) S5 Episode 6 (Square Club)
Counting to 19 The numberness of 17, 18, 19 Doubling and halving Odd and even Sharing	• Numicon • Tens frame • Cubes • Dienes	• Introduce 17, 18, 19 as 1 ten and x ones. • Explain that they all have regular names • Look at what we double to get 18. Can we double numbers to get 17 and 19? Can we halve 17 and 19? Why? Relate to odd and even. • Can you share 17, 18, or 19 things between 2,3,4 or 5 people? How many do they each get?	S5 Episode 7 (Seventeen) S5 Episode 8 (Eighteen) S5 Episode 10 (Nineteen) S5 Episode 9 (Loop the Loop – up to 18)

Counting to 20 To 20-ness of 20 Numbers to 20 section of WR Maths	• Numicon • Tens frame • Cubes • Dienes	• Introduce twenty as 2 tens and no extra ones • Recap number bonds to 10. If we know this what else do we know? Look at bonds to 20 • Addition and subtraction within 20	S5 Episode 11 (Twenty) S5 Episode 14 (I can count to 20) S5 Episode 12 (Tall Stories) S5 Episode 13 (Flights of Fancy) S5 Episode 15 (Heist)
Summer			
NUMBER ELEMENT	**Maths in the wider world**	**Intent**	**Resources**
Building numbers beyond 10	Consolidation of previously concepts	• Encourage the children to build and identify numbers to 20 (and beyond) using a range of resources. 10 frames, number shapes, towers of cubes and bead strings all support the children to see that large numbers are composed of full 10s and part of the next 10. • Provide opportunities for children to recognise that the numbers 1- 9 repeat after each full 10. So they have 1 full ten and 1, and so on.	Additional resources: Number blocks Series 3 One Moose 20 Mice – Stella Blackstone 1 is One – Tasha Tudor The Real Princess – Brenda Wiliams Jack the builder – Stuart Murphy
Counting patterns beyond 10	Consolidation of previously concepts	• Provide regular opportunities for children to count in and back beyond 19. • Representations and numerals can support children to count on and back and notice the repeating 1 – 9 patterns.	Numberblocks Series 3 Tween series A dozen ducklings lost and found – Harriet Ziefert

		• Provide representations, which clearly show the full 10s and the part of 10, for example 14 is one full ten and four. • Encourage the children to count on or back from different starting points, to say what comes before or after a given number and to place sequences of numbers in order. • You can also challenge them to find larger numbers on number tracks and 100 squares.	20 big trucks in the middle of the street – Mark Lee 1 is a snail, 10 is a Crab – April Sayre and Jeff Sayre Peg and Cat – the Teens
Spatial reasoning: match rotate and manipulate	Consolidation of previously concepts	• Provide regular opportunities for the children to complete jigsaws and shape puzzles. • They need opportunities to select and rotate shapes to fill a given space. Encourage them to explain why they chose a particular shape and why a different shape would not fit. • Provide opportunities for the children to match arrangements of shapes, prompting them to use positional language to describe where the shapes are in in relation to one another. • Ask the children to select shapes to complete picture boards or tangram outlines.	Snail Trail: A Journey Through Modern Art – Jo Saxton Which one doesn't belong – Christopher Danielson Jigsaws and shape puzzles and tangrams Pattern blocks and cusienaire rods Geo boards Numicon and base board overlays
Adding more	Consolidation of previously concepts	• Children to use real objects to see the quantity of a group can be changed by adding more. • Then first, the, now structure can be used to create mathematical stories in meaningful contexts. • At first, the children may need to re- count all of the items to see how many have altogether. E.g. 1,2,3,4…,5,6,7 • When they are ready, support them to count on E.g. 4…, 5, 6, 7 Encourage the children to represent the number stories using 10 frames, number tracks and their fingers.	Mouse count – Ellen Stoll Walsh Mr Grumpy's Outing – John Burningham Rosie's Zoo – Ailie Busby One Ted falls out of bed – Julia Donaldson Quack and count – Keith Baker

			My Granny Went to Market – Stella Blackstone
Taking Away	Consolidation of previously concepts	• Children to use real objects to see that the quantity of a group can be changed by taking items away. • The first, then, now structure can again be used to create mathematical stories in meaningful contexts. • Encourage the children to count out all of the items at the start, take away the required amount practically, and then subitise or recount to see how many are left. • Continue to encourage the children to represent the number stories using 10 frames, number tracks and their fingers.	Incey Wincey Spider game – Nrich Tad – Benji Davis Mouse Count – Ellen Stoll Walsh The Shopping Basket – John Burningham Monster Math – Anne Miranda Elevator Magic - Stuart J Murphy
Spatial Reasoning: Compose and Decompose	Consolidation of previously concepts	• Children understand that shapes can be combined and separated to make new shapes. • Provide opportunities for the children to fit shapes together and break shapes apart and to notice the new shapes they have created. • Investigate how many different ways a given shape can be built using smaller shapes.	Grandpa's Quilt – Betsy Franco Jack and the Flumflum Tree – Julia Donaldson Pezzettino – Neo Lionni Tangrams Pattern blocks and Cuisenaire rods
Doubling	Consolidation of previously concepts	• Children understand that shapes can be combined and separated to make new shapes. • Provide opportunities for the children to fit shapes together and break shapes apart and to notice the new shapes they have created. • Investigate how many different ways a given shape can be built using smaller shapes.	Double Trouble – Nrich This is the story of Alison Hubble – Allan Ahlberg Two of Everything – Lilly Hong

			Double Dave – Sue Hendra Double the Ducks – Stuart J Murphy Numberblocks Series 2 Episode 9 – Double Trouble
Sharing and Grouping	Consolidation of previously concepts	• During snack time or group activities, encourage them to check that items are shared equally and that everyone has the same. • The children should also be given opportunities to recognise and make equal groups. For example, can you put 3 crackers on each plate or plant 2 flowers into each pot. What groups do they notice on a bead string? • The children will notice that sometimes there are items left over when they share or group. • Encourage them to come up with their own suggestions for how to resolve this.	The Doorbell Rang – Pat Hutchins Nrich – Maths Story time The Gingerbread Man Bean Thirteen – Matthew McElligott One Hungry Cat – Joanne Rocklin Ness the Nurse – Nick Sharratt
Even and Odd	Consolidation of previously concepts	• Children begin to understand that some quantities will share equally into 2 groups and some won't. • They may also notice that some quantities can be grouped into pairs and some will have one left over. • Provide opportunities for them to explore these ideas in different contexts as they play and talk about what they notice. • Encourage the children to notice the odd and even structure on the number shapes and by building pair – wise patterns on the 10 frames.	Numberblocks Series 2 Episode 11 Odds and Evens One Odd Day – Doris Fisher Pete the Cat and the Missing cupcakes – James Dean Underwater Counting – Jerry Pallotta 10 Fat Sausages Song

Deepening Understanding	Consolidation of previously concepts	• Children need time and opportunities to engage extended problem solving and developing their critical thinking skills. • These problems can be linked to familiar stories or come from the children's suggestions or real problems that arise as they play. • Children to discuss different possible starting points. Children might need support to carry out their plans and to make adaptions as they go along. • Children to review and discuss their strategies. Which were the most successful, which didn't work and why?	Mr Grumpy's Outing – John Burmingham Billy's Bucket – Kes Gray Harry and his Bucketful of Dinosaurs – Ian Whybrow Who Sank the Boat – Pamela Allen Mr Archimede's Bath – Pamela Allen
Patterns and Relationships	Consolidation of previously concepts	• Children should be given opportunities to explore and investigate relationships between numbers and shapes. • Classroom resources based around a standard unit such as Cuisenaire rods, pattern blocks and unit construction blocks are good for exploring these relationships. • Children should also continue to copy, continue and create a widening range of repeating patterns and symmetrical constructions. • Draw children's attention to patterns in stories from a range of cultures.	Ants Rule The Long and Short of it – Bob Barner Pattern Fish – Trudy Harris Pattern Bugs – Trudy Harris The Leopard's Drum – Jessica Souhami Jamil's Clever Cat – Fiona French
Spatial Reasoning	Consolidation of previously concepts	• Children understand that we can make maps and plans to represent places and use these to see where things are in relation to other things. • Provide a range of maps and plans for the children to look at and discuss. What can they see on the map? Where would we put the carpet area on a map of our classroom? • Provide opportunities for them to create their own maps.	The Secret Path – Nick Butterworth Me on the Map – Joan Sweeney Little Red Riding Hood It I Built a House – Chris Van Dusen In Every House on Every Street

			– Jess Hitchman Once Upon a Time Map Book – B.G. Hennessy

Appendix 4- INSPIRE guidance in EYFS

How to use INSPIRE in EYFS (summer term)

Preparation

When you start a new unit refer to the teacher guide and study the medium term plan, which is located at the beginning of each unit. At this point consider the pre requisite skills that the children will require to access this unit. These clearly state the breakdown of the unit into sub units, which have sub headings in **BOLD.**

Prior to teaching each lesson, the teacher is expected to study the sequence of steps for each sub unit and is confident in delivering and modelling where required. The teacher guide clearly states a teaching sequence and this MUST be followed to ensure a level of consistency across the school and for the programme to be effective. Teachers are expected to gather any resources that are required for the lesson. If the teacher feels that other resources that are not stated in the teacher guides would be effective, then have them at hand.

ACB Books

As you are aware, Formative Assessment (FA) is an on-going cyclical process. Therefore, prior to every lesson teachers will be expected to use their own FA to inform next steps. For example, identifying children that may require pre teaching, scaffolding through the lesson or afternoon interventions.

Appendix 5- EYFS working wall

The model of this new design is based on the CPA approach with the view that the children are encouraged to -

Think it - Use of Learning Partners to explain reasoning (link to Voice 21)

Make it - Use of manipulatives to 'make' their answer

Draw it - Draw their answer using pictorial representations/alternative method

Explain it - Explain their answer and reasoning using STEM sentences *(STEM sentence starter to be written in a different colour to make it visual)*

MATHS WORKING WALLS

All classrooms have a working wall that includes mathematical vocabulary, a working example of the CPA approach with opportunities for reasoning and STEM sentences to promote oracy. All working walls are set out using the following format:

EYFS/KS1

Think it	Make it
Draw it	Explain it

KS2

Make it	Draw it
Explain it	Prove it

EYFS/KS1 Example: